

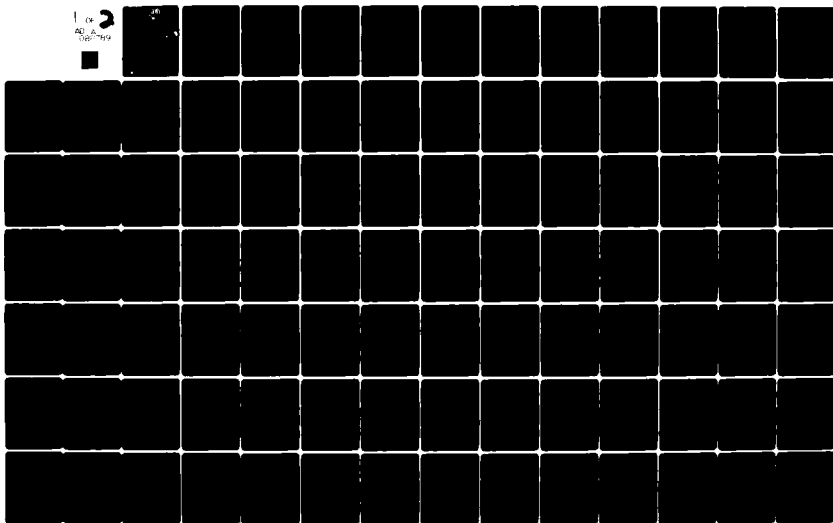
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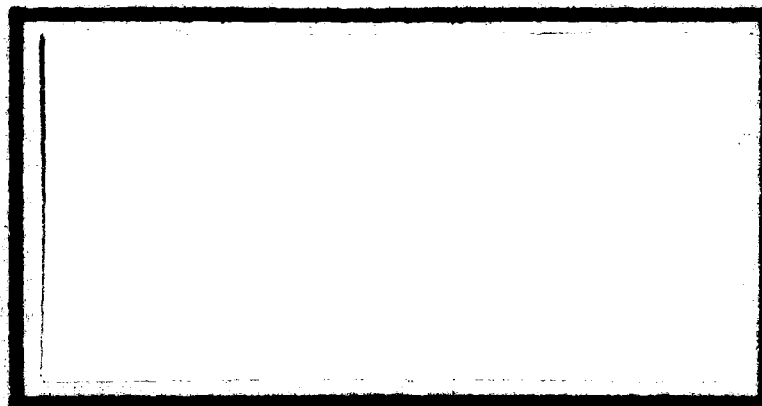


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THE EFFECTIVENESS OF A JOINT LABOR-
MANAGEMENT COUNCIL ON INCREASING
PRODUCTIVITY AND ENHANCING THE
QUALITY OF WORK LIFE

Captain Paul M. Biernacki, USAF
Captain Patricia S. Lumpkin, USAF

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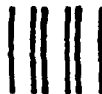
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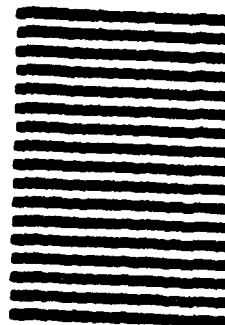
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This study is divided into two parts. Part I assesses the effectiveness of a Joint Labor-Management Council using an established Quality of Work Life Survey. The survey was given to treatment and control groups in a one pretest, two post-test research design. Factor analysis was conducted across all responses to determine underlying factors measured by the instrument. Sixteen factors relating to quality of work life and perceived productivity were identified. Workgroup factor scores were calculated and compared between the pretest and both posttests in an analysis of covariance procedure. No significant difference was found between treatment and control groups at either of the posttests for any factor after adjusting for pretest differences. Part II develops a survey instrument to assess organizational effectiveness. That instrument consists of two sections. The supervisor inventory section was developed from previous versions of an organizational assessment package and from data from current research works. The inventory was administered to a group and the resulting data analyzed via factor analysis. Thirteen factors were named. This was an improvement over the original package which contained three factors. The second section, the job inventory, was developed in the same manner as the supervisory inventory, but not tested.

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THE EFFECTIVENESS OF A JOINT LABOR-MANAGEMENT COUNCIL
ON INCREASING PRODUCTIVITY AND ENHANCING
THE QUALITY OF WORK LIFE

A Thesis

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Logistics Management

By

Paul M. Biernacki, BS
Captain, USAF

Patricia S. Lumpkin, BSE
Captain, USAF

June 1980

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This thesis, written by

Captain Paul M. Biernacki

and

Captain Patricia S. Lumpkin

has been accepted by the undersigned on behalf of the
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fulfillment of the requirements for the degrees of

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(Captain Paul M. Biernacki)

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT
(Captain Patricia S. Lumpkin)

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CHAPTER I

INTRODUCTION

Problem Statement

Goals of labor forces typically do not match the production goals of management. To deal with this problem, a variety of approaches are available. One alternative recently tested by the Department of Defense (DOD) was the Joint Labor-Management Council (JL-MC) (23:59). A need existed to determine the effectiveness of the JL-MC program before a decision could be made to continue with the program or cancel it.

Overview

This research effort is directed in two complementary directions. Part I deals with evaluation of the JL-MC. Part II deals with development of a survey for more comprehensively measuring organizational effectiveness than did the survey used in evaluating the JL-MC. Each part will be treated separately in context, although integrated in thought throughout the paper.

During a period of slowed economic growth and a steadily increasing labor force, there is increased concern with the effective use of both capital and human resources. Just as technology is advancing in response to

manufacturers' and users' profit motives, the need is stronger for increased productivity of the labor force. Productivity may be considered a ratio of output per unit of input. A common input to nearly all efforts is labor, usually expressed in manhours. Arithmetically, the nation's productivity is derived by dividing the total output of the economy (real gross national product) by total civilian employment (26:81).

A number of program areas are currently being evaluated as methods of increasing labor productivity. Of these, the following appear most promising because they are consistently showing improvement in productivity: applications of behavioral analysis, use of goal setting principles, financial compensation, participative management, and organizational structures that integrate functions and decentralize authority (20:40-41).

The area of participative management, which involves the wider sharing of responsibility and control has been highly successful and warrants further investigation. One approach to participative management is the implementation of Joint-Labor Management Councils (JL-MC). These councils are usually co-chaired by a representative of labor and of management. Membership is generally restricted to eight or less people with final selection based upon mutual agreement by the co-chairmen. The primary purpose of the councils is to act as formal advisory

bodies through which proposals for increasing productivity and quality of work life can be discussed. They are limited to topics not normally addressed during collective bargaining agreements (23:60). The council researches each submission and either makes appropriate recommendations to management for implementation or provides an explanation to the submitter to why action was not taken (10:8).

The Department of Defense was selected as a proving ground for Joint Labor-Management Councils within the federal government in early 1975 by the National Center for Productivity and Quality of Working Life (23:62). Since then, four defense agencies have formed Joint Labor-Management Councils. At one agency, a maintenance depot, empirical data was collected in the form of a quality of work life (QOWL) survey, where quality of work life consisted of such factors as employees' perceptions concerning their work and their work environment. Preliminary results, as indicated in Fulton's analysis performed at the midpoint of a longitudinal study design, indicated no statistically significant effects due to the JL-MC (10:29).

Conclusions drawn by Fulton in his analysis of the effectiveness of a Joint Labor-Management Council implied that a possible cause for the lack of significant council effects could have been because of design deficiencies in the measurement instrument (10:30). Consistent with Fulton's conclusions, the second half of this research

effort is directed at development of a survey instrument that will more comprehensively evaluate the effectiveness of an organization.

Fulton analyzed the effect of a particular program, the JL-MC, designed to improve organizational effectiveness. Equally important is the concept of evaluation of an organization in the absence of an intervention program to detect areas of weakness and strength. Organizations are essential in our increasingly interdependent and advancing technological world (24:5). Because organizations are composed of individuals seeking their own and subgroup goals, the effectiveness of the organization might be viewed as the degree of integration of all subgroup efforts toward the goals of the organization. Any operating system, including organizations, will experience problems; failure to recognize and correct problem areas will ultimately result in decreased effectiveness and possible destruction of the organization. Incomplete problem analysis and piecemeal corrective actions may lead to creation of new problems rather than solution of old ones. Thus a methodology for analyzing the total organizational environment is needed.

But why the concern with effectiveness, short of concern with whether an organization exists or demises? One frequently cited index of effectiveness is productivity. The rate of growth of productivity for the United States has slowed dramatically (14:5). In large measure the

inflation this country is experiencing today is a function of decrease in productivity (26:81). If inflation is to be decreased, there must be a reversal in the trend in productivity. The solution lies in part with labor, management, and the forms they take in organizations. To the extent that an organization is effective, it is productive. Thus, accurate diagnosis and correction of problems will benefit the drive for effectiveness. The survey instrument proposed is intended to contribute to forward movement in the analysis of effectiveness.

The material that follows examines the interrelated areas of the JL-MC approach to increased productivity, herein referred to as Part I, and the development of a survey instrument to better measure organizational factors related to organizational productivity and effectiveness, herein referred to as Part II.

PART I

JOINT LABOR-MANAGEMENT COUNCIL RESEARCH

CHAPTER II

BACKGROUND

Literature Review

Recognition of the relationships of labor or human resources to productivity can be traced back to studies published by Fredrick W. Taylor in 1911 and Oliver Sheldon in 1923. Sheldon went so far as to say that the human quality of industry was not only as important as mechanics and technology, but that it was the most important part (9:13-14). Experimentation prior to 1970 was concentrated primarily in the areas of job design, rewards given to employees, and increased employee responsibility (10:4). More recent experiments have been in the area of job enrichment. Some have shown that productivity is related to job enrichment (29:46).

Research dealing with job enrichment has indicated that quality of work life may be improved through job enrichment (36:868). Therefore, it could be hypothesized that as quality of work life improves, human resource productivity will be enhanced. Recent efforts have provided some limited support for this relationship (37:2-3; 31:68). An improvement of quality of work life in an organization would then be one method for improving productivity (12:85).

Research has indicated that increased joint participation by labor and management in staff meetings was followed by an increase in productivity (31:19). The use of a Joint Labor-Management Council is a similar method aimed at enhancing the quality of work life and increasing productivity.

Research Objective

The objective of this research was to determine the influence of the JL-MC on quality of work life and perceived productivity using an established QOWL survey.

Hypothesis

$$H_0: \mu_{1j} = \mu_{2j}$$

$$H_1: \mu_{1j} \neq \mu_{2j}$$

where:

μ_{ij} is the mean factor score;

i designates the treatment group (1) or control group (2); and

j designates the factor being tested.

CHAPTER III

METHODOLOGY

Research Design

True experiments provide the most valid information available through the use of equivalent comparison groups and through control over when and to whom is exposed to the experimental treatment (7:309-317). However, except under ideal or laboratory conditions, true experimentation is rarely possible. Such was the case with this study. A quasi-experimental design was developed controlling when and whom were measured. This approached true experimental conditions as feasibly as possible within the constraints of a natural environment.

The design used in this research was a combination of the Nonequivalent Control Group Design and the Multiple-Group Time-Series Design described by Emory (7:317-321). The survey instrument was an attitudinal survey which was administered to a treatment and a control group as a pretest. The JL-MC was then established within the treatment group. Two posttests were given at approximately six-month intervals after implementation of the council. Figure 1 depicts the design as it relates to time.

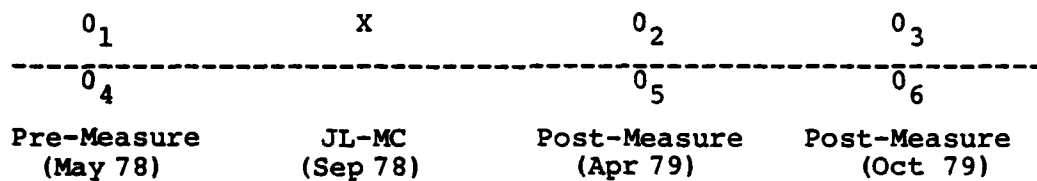


Fig. 1. Research Design

An intact equivalent design was used where the treatment and control groups were naturally existing divisions within the same maintenance directorate at a depot. Selection of the treatment group was made as a result of a recommendation made by the Federal Mediation and Conciliation Service consultant after conducting a feasibility study at the depot. Implementation of the JL-MC within the treatment group was approved by the depot commander and the union president. The two groups were functionally similar in that they utilized the same general nature and degree of technical skills. However, the specific hardware to which these skills were applied varied. Assuming similarity of the treatment and control groups, the Nonequivalent Control Group Design can be regarded as controlling the main effects of history, maturation, testing, and instrumentation (1:48).

Respondents in the treatment and control groups were randomly sampled using the following procedure. An alphabetical roster of personnel was associated with a series of random numbers. A second series of random numbers was then generated and matched to the first until

a sample size equivalent to 25 percent of the group population was reached. This sample size was the largest that could be taken without adversely affecting the mission. Adjustments for possible no-shows and unavailable personnel were made according to the methods described by Fulton who conducted an analysis at the end of the first posttest (10:12). Administration of the surveys was accomplished by the same proctors for all respondents but those used at the pretest differed from those used at the posttests. To enhance confidentiality and to avoid Privacy Act requirements, individual participants were not identified on the survey. Workgroups, which were subunits of the experimental groups, were identified and used as the unit of analysis in comparison between pretest and posttest results.

The Measurement Instrument

The same measurement instrument was used in each observation of the treatment and control groups. The Quality of Work Life Survey (Appendix A) was selected by the depot's higher headquarters, and consisted of 77 items, 4 of which dealt with categorical data about the respondents, and 73 attitudinal items designed to measure the individuals' perceptions of QOWL and productivity within their workgroups. The first 70 attitudinal items dealt with QOWL and measured responses on a 7-point Likert scale. Questions 1-5 covered job description, questions 6-52

concerned personal feelings about the job, questions 53-64 dealt with job satisfaction, and questions 65-70 asked about specific job characteristics. Questions 71-73 used a 5-point Likert scale which related to perceived productivity of the workgroup.

Although much of the literature assumes the Likert scale to be ordinal in nature (7:250), and therefore not conducive to the use of parametrics, this thinking is highly controversial. Current thought summarized by Gardner supports the use of summated scales with parametric procedures:

1. The distinction between ordinal and interval scales is not sharp. Many summated scales yield scores that, although not strictly of interval strength, are only mildly distorted versions of an interval scale.
2. Some of the arguments underlying the assertion that parametric procedures require interval strength statistics appear to be of doubtful validity.
3. Parametric procedures are, in any case, robust and yield conclusions even when mildly distorted data are fed into them. Furthermore, if the distortions are severe, various transformation techniques can be applied to the data [11:55].

This research assumes the Likert scales to be "mildly distorted" data, thereby allowing the application of parametric statistical techniques.

The individual who constructed the survey hypothesized that it contained 27 factors measuring the QOWL and perceived productivity. Fulton in his analysis of the pretest and first posttest data reduced this number to eight

factors by conducting a factor analysis across all responses (pretest and posttest 1 taken together).

Statistical Procedure

A significant portion of this research was to determine the validity of Fulton's findings, investigate the factors' internal reliability, and to name the factors. To determine the validity and reliability, a repetition of the factor analysis technique was conducted using the data collected during the three test periods. This was done using the computer procedures described in The Statistical Package for the Social Sciences (28:468-508). Specifically a principal factoring with iteration was accomplished with a minimum eigenvalue greater than or equal to 1.0 specified. Factors were orthogonally rotated with VARIMAX rotation, and factor scores computed for use in subsequent statistical analyses.

According to Emory, factor analysis is based on the proposition that

. . . if there is a systematic interdependence among a set of observed (manifest) variables, it must be due to something more fundamental (latent) which creates this commonality. . . . Factor analysis is also used as a data reduction method which summarizes the commonality of all manifest variables into a few factors [7:408].

Factor analysis ordinarily involves three steps: the preparation of a correlation matrix, the extraction of the initial factors (this is the exploration of possible

data reduction), and the rotation of the factors to a maximally interpretable solution (28:469).

When factor analysis is applied to a correlation matrix of units, such as individuals, groups, or nations, it is called a Q-factor analysis. This effort addresses R-factor analysis which is based on the correlations between variables or characteristics. Factor analysis can be used to reduce a large number of dependent or independent variables (32:451). However, although the existence of underlying factors can be identified, the labeling or determination of what each factor is requires a subjective evaluation of the observed variables which have the highest loadings of each factor. A summary of the basic procedures follows:

Since the concern is with relationships among observations, the development of a correlation matrix is a logical first step. An example of how such a matrix might be computed is shown in Table 1.

If two or more variables are highly correlated, they must share some common factor variance. Factor analysis allows determination of how many of these underlying relationships (factors) there are. By looking at the correlation matrix, it can be seen that there is a high correlation between variables 1, 3, and 4 and that variables 2 and 5 are also highly correlated. It is then expected that at least two factors can be identified in these data.

TABLE 1
CORRELATION MATRIX

		Question				
		1	2	3	4	5
Question	1	1.00	.14	.71	.66	.25
	2	.14	1.00	.13	.09	.65
	3	.71	.13	1.00	.59	.14
	4	.66	.09	.59	1.00	.00
	5	.25	.65	.14	.00	1.00

As in the above example, the two factors appear to be independent of each other (orthogonal) (28:470). That is, the variables which are highly correlated with one factor are not highly correlated with the other (28:469).

If a variable (question) measures only one factor it is said to be factorially pure. If it measures more than one factor it is said to be factorially complex. The extent to which a variable measures a given factor is reflected in its factor loading (21:661-662). In this study, variables having a loading of .3000 or greater on the factors were rank ordered in descending magnitude.

There are a number of methods for analyzing a correlation matrix to determine underlying factors. Some of these are: principal factors, centroid, diagonal, maximum

likelihood, multiple group, minres, image, and alpha. The principal factors method is one of the most widely used as it yields a mathematically unique solution of a factor problem. That is, it extracts a maximum amount of variance as each factor is calculated (21:667).

A considerable degree of mathematics is involved in the logic of the principal factoring method. However, an intuitive understanding can be achieved by looking at it geometrically. Consider variables as points in space. Those variables which are highly correlated are near each other, and away from those variables with which they do not correlate. The factor analysis problem is to shoot axes through these clusters of points, one axis for each dimension, and to account for as much of the variation of the variable as possible. Consider Figure 2. The factors, A and B, are laid out at right angles to each other (orthogonally) on reference axes (21:672). The variables are shown as numbers. Factor loadings are the variable's coordinates in relation to each factor. As can be seen, variables 1 through 5 are relatively pure measures of Factors A and B since they have high loadings on one factor or the other. For example, variable 2 has a high loading on B (.90) and only a .10 loading on A. Variable 6, on the other hand, is loaded highly on both factors, and therefore is factorially complex. The above description and picture

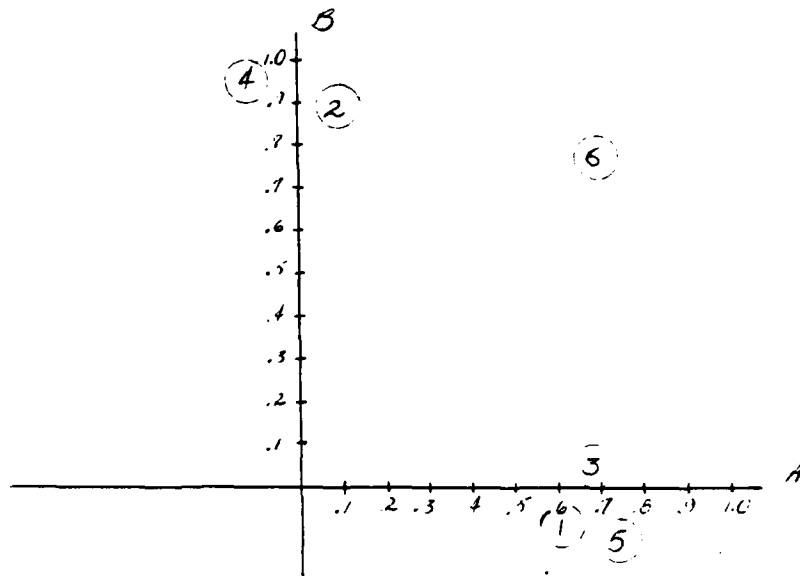


Fig. 2. Graphic Depiction of Factors

are figurative. Factor loadings are not read off from reference axes. They are calculated using complex simultaneous linear equations (21:669).

Such factor structures as the one above are not common. Consider Table 2. As can be seen, two factors are shown, but their relationship to the variables is not clear. This is a typical situation. Before discussing how to improve the interpretability, an explanation of each item shown in Table 2 is in order.

The first column of 6 numbers under factors A and B are the factor loadings (L). The amount of variation accounted for in a variable by the factor is the loading squared (21:663). So, for question 1, 49 percent of the

TABLE 2
FACTOR LOADING MATRIX

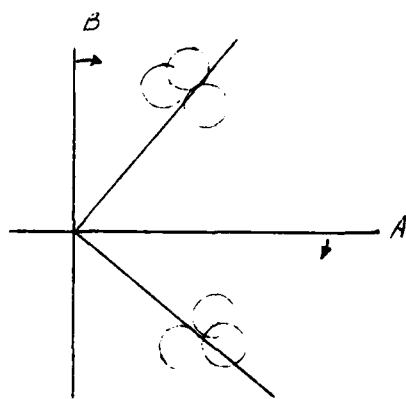
Variables	Factors				Communality
	A		B		
	L	L ²	L	L ²	
1	.70	.49	.41	.17	.66
2	.71	.50	.45	.20	.70
3	.65	.42	-0.43	.19	.61
4	.69	.47	-0.42	.18	.65
5	.71	.51	.38	.14	.64
6	.72	.52	-0.39	.15	.67
Eigenvalues	-	2.90	-	1.03	3.93
% of Variance	-	.48	-	.17	.65

total variance is accounted for by factor A. The total variance of a variable is the sum of variances for all factors. Thus, for question 1, the communality would be $(.70)^2 + (.41)^2 = .66$. That is, 66 percent of the variance in question 1 can be accounted for by factors A and B.

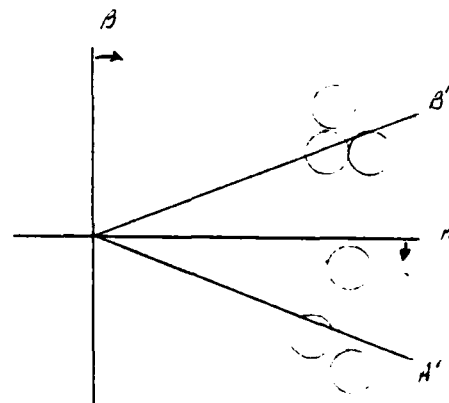
The eigenvalue is the sum of the squares of all loadings on each factor. This indicates the amount of the total variance in the data that that factor accounts for. When divided by the number of variables and multiplied by 100 it reveals the percent of total variance in the data accounted for by that variable. Eigenvalues which are

generally considered meaningful are those with values greater than one. This is because when the eigenvalue for a factor is less than one, the total variance explained by that factor is less than the variance explained by an original variable. Therefore, the eigenvalue determines the amount of factors to be considered for further analysis (28:479).

Now, interpretation of the factors needs to be addressed. To determine distinct clusters of variables, rotation of the factor matrix is accomplished. There are two main types of rotation, orthogonal, and oblique. Orthogonal rotations define uncorrelated cluster patterns, while oblique rotations search out clusters regardless of their correlation (32:466). This can best be seen in Figure 3.



Orthogonal



Oblique

Fig. 3. Graphic Depiction of Rotation

The orthogonal rotation revealed two distinct factors while oblique did not make such a clear definition. Oblique rotations provide more accurate information, but are difficult to interpret because of the interrelationships between factors.

An example of an orthogonally rotated factor matrix is given in Table 3. Notice that while the eigenvalues change from those in Table 2, the communalities and total percent of the variance explained by the factors do not.

TABLE 3
FACTOR LOADING MATRIX, ROTATED

Variables	Factors				Communality
	A		B		
	L	L ²	L	L ²	
1	.71	.51	.39	.15	.66
2	.36	.13	.75	.57	.70
3	.73	.54	.26	.07	.61
4	.70	.49	.40	.16	.65
5	.17	.03	.78	.61	.64
6	.24	.06	.77	.59	.67
Eigenvalues	-	1.76	-	2.15	3.93
% of Variance	-	.29	-	.36	.65

The principal component analysis program used in this study was the SPSS principal factoring with iteration method: PA2. This method looks for underlying factors using inferential assumptions to determine relationships between variables (28:479).

Campbell and Stanley have recommended the use of an analysis of covariance (ANCOVA) to provide statistical control over possible pretest differences between treatment and control groups. Any differences detected between the pretest mean scores could then be used to adjust posttest scores before testing for significant differences (10:17). The data used as input to the ANCOVA were the mean of the respondents' computed factor scores for each workgroup. The criteria were the two sets of posttest mean factor scores and the covariates were the workgroups' pretest mean factor scores. It was assumed that regressions about the mean for both treatment and control groups were homogeneous and normally distributed.

Assumptions and Limitations

The research included two assumptions.

1. Use of the Likert scale provides approximate interval level data and thus parametric statistical techniques can be used.
2. Persons responding represented attitudes of the parent population.

Limitations to this study included:

1. Inferences may only be made about the population sample.

2. Work groups were the smallest identifiable units due to two reasons: union objections to individual identification and Privacy Act requirements. This resulted in a small sample size for statistical analysis.

CHAPTER IV

RESULTS AND CONCLUSIONS

The factor analysis was conducted utilizing the combined responses from the pretest and both posttests. Sixteen factors were extracted with an eigenvalue equal to or greater than 1.0. These factors are shown in Appendix B, along with their three highest loading items, which were used in naming the factors. The 16 factors accounted for 60.2 percent of the total variance measured by the Quality of Work Life Survey (see Table 4).

The ANCOVA procedure utilized the mean factor scores for work groups shown in Appendix C. Using the .05 level of significance, none of the 16 factors showed significant differences between treatment and control groups at posttest 1 or posttest 2. Therefore, the null hypothesis cannot be rejected. This finding is consistent with Fulton's earlier findings of no significant difference after posttest 1 even though his analysis utilized a smaller number of factors. It is also consistent with descriptive indicators collected by management during the same period. These indicators (leave rates, complaints, grievance rates, accident rates, awards, etc.) showed no significant differences between treatment and control groups during the research period (18:11).

TABLE 4
EIGENVALUE AND PERCENT OF TOTAL VARIANCE ACCOUNTED FOR BY FACTOR

	Eigenvalue	Pct of Var	Cum Pct
Factor 1: Supportive Supervision	16.57	22.7	22.7
Factor 2: Job Meaningfulness	5.43	7.4	30.2
Factor 3: Job Importance	3.23	4.4	34.6
Factor 4: Tools, Supplies, Equipment, Satisfaction	2.39	3.3	37.9
Factor 5: Personal Growth Satisfaction	2.00	2.7	40.6
Factor 6: Work Group Productivity	1.75	2.4	43.0
Factor 7: Autonomy	1.64	2.3	45.3
Factor 8: Satisfaction with Coworkers	1.50	2.1	47.3
Factor 9: Work Group Cooperation and Performance	1.41	1.9	49.3
Factor 10: Team Participation	1.31	1.8	51.1
Factor 11: Task Accomplishment	1.24	1.7	52.8
Factor 12: Supervisory Consideration	1.20	1.6	54.4
Factor 13: Job Feedback	1.11	1.5	55.9
Factor 14: Work Group Cohesiveness	1.09	1.5	57.4
Factor 15: Job Satisfaction	1.03	1.4	58.8
Factor 16: Employee Development	1.01	1.4	60.2

In addition to the 73 questions on the survey, both treatment and control groups were asked at the second posttest if their organization had a JL-MC. The results of this survey are shown in Table 5.

TABLE 5
KNOWLEDGE OF PRESENCE OF JL-MC

Group	Response Option ¹			Total
	a	b	c	
Treatment				
Respondents	162	39	142	343
Percent	47	11	41	100
Control				
Respondents	18	44	102	164
Percent	11	27	62	100

¹a = My organization has a joint labor-management council.

b = My organization does not have a joint labor-management council.

c = I do not know if my organization has a joint labor-management council.

As can be seen, 52 percent of the treatment group responded that they did not have, or were not aware of a Joint Labor-Management Council. The above findings are in total contrast to interviews conducted with senior management and union officials who had nothing but praise for the JL-MC (17:36).

There is one important conclusion which may be drawn from this study. As measured by the QOWL survey, there was no significant effect by the JL-MC on quality of work life or perceived productivity. This may be due to one or more reasons:

1. The JL-MC actually had no effect on perceived productivity and QOWL.
2. The council may have only had an effect on those who were directly involved with it and were not administered the QOWL survey.
3. The QOWL survey did not measure all significant areas relating to quality of work life and perceived productivity.
4. The small sample size was not large enough for a slight difference to be detected.

CHAPTER V

RECOMMENDATIONS

Based on the results of this study, a single recommendation is made. In order to have an effect on quality of work life or perceived productivity in an organization, the presence and activities of a JL-MC must, at the very least, be publicized. The fact that over 50 percent of the members surveyed in the treatment group were not aware of the council may be one major reason that no effect could be shown. More involvement by lower level personnel should also increase awareness within the organization, and increase the probability of attitude change. The JL-MC must have the active support of both upper level management and upper level union personnel. Prima facie support will only result in a similar response.

PART II
ORGANIZATIONAL ASSESSMENT PACKAGE RESEARCH

CHAPTER VI

BACKGROUND

Research Objective

As stated earlier, one of the conclusions drawn by Fulton as the result of his analysis was that the survey instrument used possibly contained design deficiencies, therein preventing a comprehensive evaluation of the situation. The effort undertaken in this portion of the research was designed to develop a survey instrument to better aid in assessing organizational effectiveness and subsequent improvement.

Literature Review

Literature abounds with research relating to numerous organizational factors. While each organization is itself unique, there are components common to nearly all. Some writers, like Cunningham, propose that the only way to deal with the multiplicity of determinants of effectiveness is via a separate and different approach to each of such measures as accomplishments, capabilities, resource utilization, functionality, etc. (3:465). However, no structure operates in isolation from all else and such diversifying efforts as noted above ignore possible joint actions/affects and contribute to complexity and difficulty

in assessment. The alternative approach is one that attempts to view the system under analysis in its entirety (22:347). This wholistic thrust looks at components of the total situation in an integrative fashion wherein each part influences and is influenced by each of the other parts.

Published works focus on many aspects of organizations. By far the dominant topic of attention is leadership. The work environment, subordinate personnel, structure of the organization, and task components are other areas receiving attention. With the multitude of variables available for association with effectiveness, models are usually constructed employing a small number of criteria. In a survey of studies focusing on single versus multiple properties in assessing degree of effectiveness, Steers found "a lack of consensus as to what constitutes a useful and valid set of effectiveness measures." He concluded that models and assessment packages are compiled based on the theoretical perspective of the researcher (33:550).

The foundation of the survey instrument developed from this effort lies in Hendrix's three-component leadership effectiveness model (15:5). He later revised and expanded this model and labeled it an organizational effectiveness model (16:5). This model purports that organizational effectiveness is a function of the criterion selected, managerial style employed, and the situational

environment. It is these three components that comprise the survey package to assess organizations.

The model was followed by development of a survey instrument to assess and aid in improvement of organizational effectiveness throughout the Air Force by measuring the components of the model. Additionally, it was to serve as part of consultative services, a training aid, and a point for research, all functions of the Air Force agency for whom the Organizational Assessment Package (OAP) was developed. This package was first administered in 1977 to obtain baseline data for improving the package. Based on results from that study, a lengthy section was removed to reduce total package size and improve uniformity of format. A similar, shorter section was retained to prevent gaps in coverage of the desired areas. The second version was submitted to the Air Force user where, for operational reasons, rewording of several items and deletion of 40 items from the section dealing with supervision occurred. This essentially resulted in the third version, which was administered by the using agency and validated by Hendrix in the first half of 1978 (16:7).

At this point, the OAP (Version 3) consisted of six sections. Biographical information and inpart items associated with the situational environment were assessed through the Background Information section. The organizational level of a workgroup, the workgroup type and size, group

member maturity, the organization's geographic region, extent of the use of workgroup meetings to establish goals, extent of communication between workgroup members and stability of work hours are items that section attempted to measure. A Job Inventory section measured other situational environment factors like skill variety, task identity, task significance, autonomy, and feedback from the job.

The Organizational Climate Inventory section contained factors relating to communications, general organizational conditions, employee concern and commitment, decision making, and recognition. Job satisfaction was measured by 30 questions on the Job Satisfaction Questionnaire. Perceived productivity was measured by seven items in the Perceived Productivity Inventory section (16:8). Lastly there were 41 items relating to supervisory behavior in the Supervisory Inventory section.

Two sections are key representatives of two of the three components of the organizational effectiveness model. In attempting to improve the OAP, expanded versions of these two surveys were developed. Appendix D contains the expanded supervisor (managerial style) inventory. Appendix E contains the expanded job (situational environment) inventory. The expansion of each section resulted from both review of current literature as well as reappraisal of original inventory items.

Because the Air Force agency who was to operationally use the OAP reworded and deleted several items from the supervisor inventory, the possibility existed that items valid in assessing additional organizational factors by that section had been lost. Thus, the newest version of the supervisor inventory (Appendix D) contains items from both the original (items 1 through 29 and 121 through 150) and the revised versions (items 69 through 120) of the OAP. The next step was a review of current literature. Some material was duplicative of that already present in the OAP, such as that by Jermier and Dowell. Other works were aimed at behavior irrelevant to that under study; Green and Sterrett are examples. But a limited number of writers provided interesting aspects not yet included.

Lord identified eight task related and four group maintenance related leadership functions frequently required in his analysis of the behavior of a functional leader (35:117). These functions served as starting points for items 55 through 58 of Appendix D. In a similar vein, Curtis, Smith and Small were concerned with the behavior of little league coaches and the relationship between their team's win-loss record and the team's attitude toward the coach (4:296). Curtis enumerated ten leader-behaviors of interest, some of which serve as basis for items 30 through 33 of the supervisor inventory.

A somewhat different approach is represented by Morse, in that he is concerned with managerial effectiveness. He indicated that a collection of 51 items he devised described specific behavior and activities that managers perform and they cluster about six managerial roles (27:26). Items 34 through 54 of Appendix D have as their foundation Morse's work. Sweney, a prolific writer, leans heavily toward motivation, but nevertheless, points out certain actions that any manager/supervisor would do well to consider (34:14). In so doing, his work suggested items for measurement related to those seen in items 61 through 68.

Dowling stressed the need for managers to act if they are to be considered successful leaders (6:130). Thus a final two items, 59 and 60, were added to the supervisor inventory.

Much the same approach was used in developing the supervisory inventory as was used in the development of the expanded job inventory (Appendix E). As with the supervisor portion, all questions from Version 3 of the OAP were included (items 1 through 56). Then a search of recent published works was conducted to expand the inventory.

Dittrich, as with many other researchers, provided insight into ways to examine overall organizational operation, but never homed in on the facet of the job as seen by individual workers. On the other hand, the work by Young

touched many relevant points, but they were duplicates of those incorporated in the original OAP.

Kabanoff used the structural role theory as a basis for analysis of working organizations. He indicated that four types of organizations could be delineated along lines of the extent of collaboration/coordination (19:165). His work served as impetus for items 57 and 58 of the expanded inventory. Jaques used time as an instrument to evaluate jobs (18:125). In so doing, he touched a factor common to all jobs and therein is the basis for items 59 and 60.

While the military organization shares many traits with commercial or private organizations, it also has many unique characteristics. Gould was concerned about interest and utilization of airmen; however, these key concepts could have equal applicability in or out of military service. His work caused development of items 61 through 64 of the new inventory (13:4). Turney worked with the U.S. Army and was interested in many of the same things as Gould (35:18). Items 65 through 68 reflect his main points.

While Crawford did not provide any directly usable concepts, it is worth noting that his work with the Navy concerning strategy for dealing with disciplinary problems affords a good case of delineation between perception and satisfaction (2:23). It is noteworthy because many of the

studies reviewed herein ignored or quickly passed over that most crucial element to any analysis work.

Much as Sweney, Franklin is a prolific writer. He developed lengthy questionnaires "for assessing and monitoring changes in critical social-psychological factors affecting the performance of Navy units [8:v]." Items 72 through 80 are based on that material. Finally, the two remaining items, 64 and 81, are simply the device of these researchers as a result of exposure to day-to-day living.

CHAPTER VII

METHODOLOGY

Research Design

The supervisor inventory as presented in Appendix D was administered to 118 Air Force Institute of Technology graduate students and 28 graduate students at a civilian institute. All responses were made on an Opscan form. The same administrator served in all cases. Participation was voluntary and there was no attempt made to select respondents. Rather, it was a convenience sample from which to gather data for the initial purification and validation of the bank of questions. While all respondents were students, they were instructed to draw upon past work experience in completing the survey. The job inventory was compiled at too late a date to permit administration. A procedure similar to that followed for the supervisor inventory could be performed on the job inventory with the resulting parts combined to serve as the improved organizational effectiveness survey instrument.

Statistical Procedure

A factor analysis similar to that conducted in Part I of this research was accomplished using the data collected with the supervisor inventory given to the

graduate students. For the analysis, the BMD Biomedical Computer Factor Analysis Program was used (5:90). Again, a principal factoring method with iteration was employed with a criteria for factor extraction specified as an eigenvalue greater than or equal to 1.0. Orthogonal (VARIMAX) rotation was accomplished using squared multiples for the diagonal elements in order to identify the underlying factors. Again, a factor loading of .3000 or higher was considered significant.

CHAPTER VIII

RESULTS AND CONCLUSIONS

The factor analysis revealed 30 underlying factors with an eigenvalue of 1.0 or higher. After rotation, the factor loadings were examined, and those items with the highest significant loadings were utilized in naming the factors. Thirteen factors could be named and are shown in Appendix F with their highest loading items.

The above findings have shown an improved measurement capability for the OAP. By measuring 13 factors rather than three, a greater ability exists to detect differences. This should greatly aid in improving the validity and reliability of future research findings.

CHAPTER IX

RECOMMENDATIONS

There are three areas where additional work is warranted. First, the Supervisory Inventory needs to be streamlined, concentrated and readministered. Streamlining can be accomplished by scanning the loadings for each question across all factors. Those questions which are not high loading on any factor should be eliminated. Additionally, in the instances where many questions loaded highly on a factor, only a limited number, possibly no more than ten, should be retained. Those 17 unnamed factors should be examined, and, if possible, additional related questions written and included to measure as yet untapped supervisory aspects. These steps should result in an inventory trimmed to less than 100 questions in which the factors have been strengthened. Then the inventory should be administered to as large and diverse a sample as possible, keeping all good sampling techniques in mind.

The second area open for work is the job inventory. All the procedures used as well as those recommended in conjunction with the supervisor inventory should be carried out with the job inventory. Finally, the two parts of the OAP should be combined and administered as a complete package in an organizational entity¹¹ for validation. The constructed

OAP would then provide the tool for assessing and aiding in the improvement of organizational effectiveness, a keystone to improved productivity and a better life for all.

APPENDICES

APPENDIX A
QUALITY OF WORK LIFE SURVEY

INSTRUCTIONS

- A. If this survey is to be helpful, it is very important that you answer each question as thoughtfully and frankly as possible. This is not a test and there are no right or wrong answers.
- B. Please answer all questions in order.
- C. All of the questions in the survey can be answered by shading in one of the answer spaces for each question ON THE ANSWER SHEET provided. If you do not find the exact answer that fits your case, use the one that is closest to it. DO NOT fill in more than one answer space for each question.
- D. This survey is designed for automatic scanning of your responses. You are to answer each question by shading in the appropriate space ON THE ANSWER SHEET, as in this "humorous" example:

Found in the survey: Everyone should pay more taxes?

1-----	2-----	3-----	4-----	5-----	6-----	7-----
Strongly	Disagree	Slightly	Neutral	Slightly	Agree	Strongly
Disagree		Disagree		Agree		Agree

RIGHT WAY
TO MARK
ANSWER SHEET

1	2	3	4	5	6	7
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WRONG WAYS
TO MARK
ANSWER SHEET

1	2	3	4	5	6	7
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Make your pencil marks on the ANSWER SHEET heavy and fill in the entire space.
- Erase cleanly any answer you wish to change.
- Make no stray pencil markings of any kind.

E. Remember, the value of the survey depends upon your being straight-forward and candid in answering the questions in this survey. No attempt will be made to identify an individual with a particular set of responses.

F. Each section of the survey has short instructions about that section. Please be sure to read them before beginning.

PUT ANSWERS ON ANSWER SHEET

SECTION ONE

The instructions which follow are designated to assist you in providing important information on the answer sheet before you complete the questions. Please read the instructions carefully.

This section asks you to provide personal data on yourself. It will be used to group your work attitudes with other individuals in order to make comparisons across different groups of people.

Please mark on the survey ANSWER SHEET the letter response that best describes you. These answers go in the upper left hand corner of the ANSWER SHEET where the name is usually placed.

1. Do you currently supervise any personnel in your official job capacity?

A. Yes

B. No

2. How many years have you worked at SA-ALC?

A. Under 1 year

D. 10-14 years

B. 1-4 years

E. 15-19 years

C. 5-9 years

F. 20 years or more

3. How long have you been working for your present supervisor?

A. Under 6 months

D. 5-9 years

B. Six months to one year

E. 10 years or longer

C. 1-4 years

4. Mark either A, B or C as directed by the survey monitor.

(Now, on the answer sheet, in the area below the statement "USE A #2 PENCIL ONLY")

- place marks for the DATE of the survey in the section labelled date, and
- in the section labelled IDENTIFICATION NUMBER, place the identifying code for your work group as assigned by the survey monitor.

Thank you for providing this information. Now please begin Section Two and continue through to the end of the survey.

SECTION TWO

This part of the questionnaire asks you to describe your job as objectively as you can.

Please do not use this part of the questionnaire to show how much you like or dislike your job. Questions about that will come later. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

To what extent does your job require you to work with mechanical equipment?

1-----2-----3-----4-----5-----6-----7

Very little; the job requires almost no contact with mechanical equipment of any kind.

Moderately

Very much; the job requires almost constant work with mechanical equipment.

You are to mark on the answer sheet the number which is the most accurate description of your job.

If, for example, your job requires you to work with mechanical equipment a good deal of the time--but also requires some paperwork--you might mark the number 6.

1 1 2 3 4 5 6 7
 ☐ ☐ ☐ ☐ ☐ ☒ ☐

If you do not understand these instructions, please ask for assistance.

NOTICE: Beginning at this point and continuing throughout the survey, the responses you have to select from are numbered (e.g., 1 thru 7) rather than lettered (e.g., A thru F).

PUT ANSWERS ON ANSWER SHEET

1. To what extent does your job require you to work closely with other people (either clients or people in related jobs in your own organization)?

1-----2-----3-----4-----5-----6-----7			
<table border="0"> <tr> <td>Very little; dealing with other people is not at all necessary in doing the job.</td> <td>Moderately; some dealing with others is necessary.</td> <td>Very much; dealing with other people is an absolutely essential and crucial part of doing the job.</td> </tr> </table>	Very little; dealing with other people is not at all necessary in doing the job.	Moderately; some dealing with others is necessary.	Very much; dealing with other people is an absolutely essential and crucial part of doing the job.
Very little; dealing with other people is not at all necessary in doing the job.	Moderately; some dealing with others is necessary.	Very much; dealing with other people is an absolutely essential and crucial part of doing the job.	

2. To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing--aside from any "feedback" co-workers or supervisors may provide?

1-----2-----3-----4-----5-----6-----7			
<table border="0"> <tr> <td>Very little; the job itself is set up so I could work forever without finding out how well I am doing.</td> <td>Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not.</td> <td>Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.</td> </tr> </table>	Very little; the job itself is set up so I could work forever without finding out how well I am doing.	Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not.	Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.
Very little; the job itself is set up so I could work forever without finding out how well I am doing.	Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not.	Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.	

3. To what extent do you enjoy performing the actual day-to-day activities that make up your job?

1-----2-----3-----4-----5-----6-----7			
<table border="0"> <tr> <td>Very little; I rarely enjoy the daily activities of my job.</td> <td>Moderately; sometimes I do and sometimes I don't.</td> <td>Very much; I almost always enjoy the daily activities of my job.</td> </tr> </table>	Very little; I rarely enjoy the daily activities of my job.	Moderately; sometimes I do and sometimes I don't.	Very much; I almost always enjoy the daily activities of my job.
Very little; I rarely enjoy the daily activities of my job.	Moderately; sometimes I do and sometimes I don't.	Very much; I almost always enjoy the daily activities of my job.	

4. To what extent are there things about working here (people, policies or conditions) that encourage you to work hard?

1-----2-----3-----4-----5-----6-----7			
<table border="0"> <tr> <td>Very little; this place does not inspire me to work hard.</td> <td>Moderately; sometimes I feel like working hard and sometimes I don't.</td> <td>Very much; I often feel like working hard.</td> </tr> </table>	Very little; this place does not inspire me to work hard.	Moderately; sometimes I feel like working hard and sometimes I don't.	Very much; I often feel like working hard.
Very little; this place does not inspire me to work hard.	Moderately; sometimes I feel like working hard and sometimes I don't.	Very much; I often feel like working hard.	

5. To what extent do managers or co-workers let you know how well you are doing your job?

1-----2-----3-----4-----5-----6-----7			
<table border="0"> <tr> <td>Very little; people almost never let me know how well I am doing.</td> <td>Moderately; sometimes people may give me "feedback;" other times they may not.</td> <td>Very much; managers or co-workers provide me with almost constant "feedback" about how well I am doing.</td> </tr> </table>	Very little; people almost never let me know how well I am doing.	Moderately; sometimes people may give me "feedback;" other times they may not.	Very much; managers or co-workers provide me with almost constant "feedback" about how well I am doing.
Very little; people almost never let me know how well I am doing.	Moderately; sometimes people may give me "feedback;" other times they may not.	Very much; managers or co-workers provide me with almost constant "feedback" about how well I am doing.	

PUT ANSWERS ON ANSWER SHEET

SECTION THREE

Now please indicate how you personally feel about your job.

Each of the statements below is something that a person might say about his or her job. You are to indicate your own, personal feelings about your job by marking how much you agree with each of the statements.

Place your answers ON THE ANSWER SHEET in accordance with the following scale:

How much do you agree with the statement?						
1-----	2-----	3-----	4-----	5-----	6-----	7-----
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

6. I feel that most of the things I do on my job are meaningless.
7. I have difficulty getting the tools and supplies I need on my job.
8. I don't care very much how well my work gets done.
9. I frequently have to stop to get the things that I need on my job.
10. The job itself provides very few clues about whether or not I am performing well.
11. I feel personally responsible for the work I do on my job.
12. I do not have enough training to do my job well.
13. It's important to me that I do my job well.
14. Just doing the work required by the job provides many chances for me to figure out how well I am doing.
15. The things I do on my job are important to me.
16. I have all the skills I need in order to do my job.
17. The work I do on my job is meaningful to me.
18. I have trouble getting the facts and information I need to do my job well.

PUT ANSWERS ON ANSWER SHEET

PUT ANSWERS ON ANSWER SHEET

How much do you agree with the statement?						
1-----	2-----	3-----	4-----	5-----	6-----	7-----
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

19. The job requires a lot of cooperative work with other people.
20. I am generally satisfied with the kind of work I do in this job.
21. It's hard, on this job, for me to care very much about whether or not the work gets done right.
22. Most of the things I have to do on this job seem useless or trivial.
23. People on this job often thing of quitting.
24. I seldom have decisions forced on me.
25. There is a "group spirit" that exists amongst the members of my work group.
26. It is hard to get people higher up in this organization to listen to people at my level.
27. Generally speaking, I am very satisfied with this job.
28. The supervisors and co-workers on this job almost never give me any "feedback" about how well I am doing in my work.
29. My own feelings generally are not affected much one way or the other by how well I do on this job.
30. I frequently think of quitting this job.
31. Groups around here just don't cooperate with each other.
32. I feel bad and unhappy when I discover that I have performed poorly on this job.
33. Supervisors often let me know how well they think I am performing the job.
34. The job can be done adequately by a person working alone---without talking or checking with other people.
35. I feel a great sense of personal satisfaction when I do this job well.
36. Most people on this job are very satisfied with the job.
37. I have a lot of say over how decisions are made.
38. I can modify decisions made by other people.

PUT ANSWERS ON ANSWER SHEET

How much do you agree with the statement?						
1-----	2-----	3-----	4-----	5-----	6-----	7-----
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

39. Some of the groups we have to deal with "won't give an inch."
40. My supervisor leaves it up to me to decide how to go about doing my job.
41. My supervisor encourages subordinates to participate in important decisions.
42. My supervisor keeps subordinates informed.
43. My supervisor never gives me a chance to make important decisions on my own.
44. My supervisor keeps informed about how subordinates think and feel about things.
45. I don't care what happens to this organization as long as I get my pay check.
46. Activities are well planned here.
47. You can take it easy and still get your work done.
48. I will probably look for a new job in the next year.
49. Getting a lot of work done is important to people here.
50. This is a highly efficient, work-oriented place.
51. There are always deadlines to be met in this organization.
52. What happens to this organization is really important to me.

PUT ANSWERS ON ANSWER SHEET

SECTION FOUR

Now, please indicate how satisfied you are with each aspect of your job listed below.

Place your answers ON THE ANSWER SHEET in accordance with the following scale.

<u>How satisfied are you with an aspect of your job?</u>						
1-----	2-----	3-----	4-----	5-----	6-----	7-----
Extremely Dissatis- fied	Dissatis- fied	Slightly Dissatis- fied	Neutral	Slightly Satisfied	Satis- fied	Extremely Satisfied

How satisfied are you with:

53. the way you are treated by the people you work with?
54. the amount of support and guidance you receive from your supervisor?
55. the chances you have to learn new things.
56. the chances you have to do something that makes you feel good about yourself as a person?
57. the chances you have to do the things you do best?
58. the friendliness of the people you work with?
59. the chances you have to accomplish something worthwhile?
60. the respect you receive from the people you work with?
61. the degree of respect and fair treatment you receive from your boss?
62. the quality of the equipment you work with?
63. the resources you have to do your job?
64. the overall quality of the supervision you receive in your work?

PUT ANSWERS ON ANSWER SHEET

SECTION FIVE

Listed below are a number of characteristics which could be present on any job.

Place your answers ON THE ANSWER SHEET in accordance with the following scale.

To what degree are these characteristics present on your job?						
1-----	2-----	3-----	4-----	5-----	6-----	7-----
Never	Very Seldom	Seldom	Occasion- ally	Often	Very Often	Always

- 65. Members of my work group take a personal interest in each other.
- 66. My immediate supervisor communicates often with me.
- 67. Members of my work group talk to each other about their personal problems.
- 68. Members of my work group eat lunch together.
- 69. The directions and guidance I receive from my supervisor are clear, concise and understandable.
- 70. The communications I have with my immediate supervisor are worthwhile.

PUT ANSWERS ON ANSWER SHEET

PUT ANSWERS ON ANSWER SHEET

SECTION SIX

Every employee produces something in his or her work. It may be a "product" or it may be a "service." It is sometimes difficult, however, to identify that product or service. Listed below are some of the products or services produced at an installation.

equipment calibrated	pay vouchers	work orders
typed pages	packaging	jobs planned
contracts	technical	procedures
reports	assistance	written
	classifications	food prepared

These are just a few of the products or services to be found. There are others, of course. We would like you to think carefully of the things YOU produce, and also of the things produced by those people who work with you in your work group (i.e., everyone who works for your boss).

There is a scale provided for each question. Select the response numbers (1 thru 5) you are most comfortable with and fill in answer sheet.

71. Thinking now of the various things produced by the people you know in your work group, how MUCH are they producing?

1-----	2-----	3-----	4-----	5-----
It is very low.	It is fairly low.	It is neither high nor low.	It is fairly high.	Their production is very high.

72. How good would you say is the QUALITY of the products or services produced by the people you know in your work group?

1-----	2-----	3-----	4-----	5-----
The quality is poor.	The quality is not good.	The quality is fair.	The quality is good.	The quality is excellent.

73. Do the people in your work group seem to get maximum output from the resources (money, people, equipment, etc.) they have available? That is, how EFFICIENTLY do they work?

1-----	2-----	3-----	4-----	5-----
They do not work efficiently at all.	Not too efficient.	Fairly efficient.	They are very efficient.	They are extremely efficient.

THE SURVEY IS NOW COMPLETE. THANK YOU FOR YOUR COOPERATION.

PUT ANSWERS ON ANSWER SHEET

APPENDIX B
QUALITY OF WORK LIFE SURVEY FACTORS

<u>FACTOR</u>	<u>ITEM</u>	<u>LOADING</u>	<u>STATEMENT/QUESTION</u>
<u>Factor 1</u> Supportive Supervision	54	.76	The amount of support and guidance you receive from your supervisor?
	66	.67	My immediate supervisor communicates often with me.
	70	.66	The communications I have with my immediate supervisor are worthwhile.
<u>Factor 2</u> Job Meaningfulness	6R*	.57	I feel that most of the things I do on my job are meaningless.
	21	.65	It's hard, on this job, for me to care very much about whether or not the work gets done right.
	22	.63	Most of the things I have to do on this job seem useless or trivial.
<u>Factor 3</u> Job Importance	13	.60	It's important to me that I do my job well.
	15	.67	The things I do on my job are important to me.
	17	.50	The work I do on my job is meaningful to me.
<u>Factor 4</u> Tools, Supplies, Equipment, Satisfaction	7R*	.59	I have difficulty getting the tools and supplies I need on my job.
	62	.59	The quality of the equipment you work with?
	63	.57	The resources you have to do your job?
<u>Factor 5</u> Personal Growth Satisfaction	56	.61	The chances you have to do something that makes you feel good about yourself as a person?
	57	.60	The chances you have to do the things you do best?
	59	.58	The chances you have to accomplish something worthwhile?

*Item is reverse scored.

<u>FACTOR</u>	<u>ITEM</u>	<u>LOADING</u>	<u>STATEMENT/QUESTION</u>
<u>Factor 6</u> Work Group Productivity	71	.71	Thinking now of the various things produced by the people you know in your work group, how MUCH are they producing?
	72	.78	How good would you say is the QUALITY of the products or services produced by the people you know in your work group?
	73	.65	Do the people in your work group seem to get maximum output from the resources (money, people, equipment, etc.) they have available? That is, how EFFICIENTLY do they work?
<u>Factor 7</u> Autonomy	37	.68	I have a lot of say over how decisions are made.
	38	.65	I can modify decisions made by other people.
	40	.44	My supervisor leaves it up to me to decide how to go about doing my job.
<u>Factor 8</u> Satisfaction with Coworkers	53*	.51	The way you are treated by the people you work with?
	58*	.61	The friendliness of the people you work with?
	60*	.59	The respect you receive from the people you work with?
<u>Factor 9</u> Work group Cooperation and Performance	31R*	.46	Groups around here just don't cooperate with each other.
	35	.28	I feel a great sense of personal satisfaction when I do this job well.
	39R*	.54	Some of the groups we have to deal with "won't give an inch."

*Item is reverse scored.

<u>FACTOR</u>	<u>ITEM</u>	<u>LOADING</u>	<u>STATEMENT/QUESTION</u>
<u>Factor 10</u> Team Participation	19	.34	The job requires a lot of cooperative work with other people.
	34R*	.53	The job can be done adequately by a person working alone--without talking or checking with other people.
	51	.24	There are always deadlines to be met in this organization.
<u>Factor 11</u> Task Accomplishment	46	.38	Activities are well planned here.
	49	.43	Getting a lot of work done is important to people here.
	50	.59	This is a highly efficient, work-oriented place.
<u>Factor 12</u> Supervisory Consideration	43R*	.29	My supervisor never gives me a chance to make important decisions on my own.
	44	.28	My supervisor keeps informed about how subordinates think and feel about things.
	70	.33	The communications I have with my immediate supervisor are worthwhile.
<u>Factor 13</u> Job Feedback	2	.49	To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing--aside from any "feedback" co-workers or supervisors may provide?
	4	.36	To what extent are there things about working here (people, policies or conditions) that encourage you to work hard?
	5	.39	To what extent do managers or co-workers let you know how well you are doing your job?

*Item is reverse scored.

<u>FACTOR</u>	<u>ITEM</u>	<u>LOADING</u>	<u>STATEMENT/QUESTION</u>
<u>Factor 14</u> Work Group Cohesiveness	65	.43	Members of my work group take a personal interest in each other.
	67	.44	Members of my work group talk to each other about their personal problems.
	68	.40	Members of my work group eat lunch together.
<u>Factor 15</u> Job Satisfaction	27	.29	Generally speaking, I am very satisfied with this job.
	30R*	.28	I frequently think of quitting this job.
	36	.34	Most people on this job are very satisfied with the job.
<u>Factor 16</u> Employee Development	12R*	.44	I do not have enough training to do my job well.
	16	.37	I have all the skills I need in order to do my job.
	18R*	.30	I have trouble getting the facts and information I need to do my job well.

*Item is reverse scored.

APPENDIX C
MEAN FACTOR SCORES FOR WORK GROUPS

CONTROL WORK GROUPS

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	1-2	(n=3)		(n=11)		(n=17)	
1		.06	1.77	.14	.96	-.21	1.03
2		.02	.38	.12	.43	.11	.82
3		.59	.27	.40	.45	.18	.53
4		.21	.61	.43	.89	.76	.43
5		-.05	.23	-.65	1.16	-.07	.77
6		-.64	1.17	-.09	.87	-.26	.49
7		-.06	.86	.36	.75	.10	.55
8		.50	.80	.43	.44	.21	1.05
9		.05	.94	-.01	.62	-.39	.76
10		-.34	.69	-.60	.37	-.49	.39
11		.04	.71	-.71	.70	-.57	.53
12		.23	.07	-.13	.38	-.09	.63
13		.01	.40	.06	.63	-.10	.64
14		.36	.38	.09	.68	-.14	.57
15		.15	.08	-.15	.72	.14	.66
16		.26	.77	.17	.55	-.10	.77
	3	(n=2)		(n=6)		(n=5)	
1		1.14	.02	.51	1.20	.41	.77
2		.33	.46	-.31	.52	.22	.66
3		.56	.28	-.27	.30	.10	.57
4		.87	.81	.03	.80	.05	.83
5		-.27	.21	-.53	.75	-.41	.70
6		-.25	.74	.36	.52	-.20	.28
7		.75	.24	.20	.68	.79	.39
8		.58	1.05	.71	.49	.10	.25
9		-.23	.92	-.39	.51	-.06	.90
10		-.20	.22	-.20	.46	-.70	.26
11		-.83	1.24	-.28	.90	-.44	.56
12		-.02	.23	.41	.35	.12	.66
13		-.02	1.24	.05	.34	.06	.48
14		.49	.82	-.11	.82	-.06	.77
15		-1.04	1.51	-.14	.53	-.52	.50
16		.16	.17	.03	.67	.15	.38

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	4	(n=3)		(n=5)		(n=8)	
1		.26	.99	.69	.71	.24	1.24
2		-.35	.34	.56	.34	.42	.57
3		-.31	.66	.02	.83	.43	.61
4		.25	.24	.53	1.42	.41	.92
5		.12	.77	.48	.54	.05	1.07
6		-.11	.39	-.31	1.26	.06	.89
7		.55	.41	.38	.95	.03	1.09
8		-.08	.59	.73	.38	.26	.53
9		-.21	.97	.09	.48	-.59	.74
10		.60	1.33	.17	1.26	-.10	.55
11		.55	.71	-.09	.69	.01	.63
12		-.06	.29	-.07	.71	-.17	.46
13		.13	.40	.15	.68	.31	.40
14		-.01	.67	.01	.56	-.13	.63
15		-.48	.77	.24	.52	-.47	1.08
16		.46	.79	-.14	.88	-.46	.60
	6-7	(n=5)		(n=18)		(n=18)	
1		.38	.93	-.35	.95	-.04	.77
2		-.51	1.59	.37	.56	-.09	1.07
3		.26	.53	-.33	1.10	-.31	1.09
4		.09	1.24	.29	.86	.33	.69
5		-.56	1.09	.18	.79	.09	.89
6		-.12	.67	-.34	.82	-.29	.87
7		.31	1.13	.16	.59	.20	.83
8		-.39	1.22	-.14	.61	-.07	.74
9		-.44	1.04	-.16	.78	-.01	.77
10		-.07	1.00	-.27	.81	-.08	.68
11		-.03	.48	.14	.70	.11	.54
12		.29	.66	.33	.51	.35	.83
13		.35	1.01	.36	.56	.15	.75
14		-.00	.46	-.29	.73	.03	.75
15		-.40	.56	.03	.67	.13	.56
16		.19	.48	-.43	.71	.07	.79

FACTOR	WORK GROUP	PRETEST		POSTTST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	8-9	(n=21)		(n=5)		(n=4)	
1		.55	.84	-.15	1.18	.46	.63
2		-.04	.87	.07	.91	.36	.25
3		-.28	1.25	.61	.55	.45	.55
4		-.06	.74	-.25	.65	.13	.91
5		-.16	.94	-.15	.50	-.62	.70
6		-.38	.91	-.52	1.10	-.12	.16
7		.28	.87	-.24	.49	-.21	.67
8		-.15	.81	.14	1.13	-.27	1.43
9		-.36	.97	.03	.87	.02	.47
10		.33	.77	.29	.50	-.25	.27
11		-.01	.82	.15	.89	-.37	.87
12		.32	.84	.05	.45	-.16	.30
13		.33	.70	-.29	.58	.25	.26
14		.15	.81	-.09	.54	-.03	.26
15		.01	.80	.11	.35	.53	.27
16		.12	.81	.16	.35	.18	.80
	10	(n=8)		(n=21)		(n=18)	
1		.36	.92	-.29	.94	-.43	.86
2		.14	.57	.20	.67	-.28	.91
3		.22	.25	.06	.45	.08	.69
4		-.72	.90	.16	.88	-.31	.83
5		.04	.58	-.37	1.19	-.21	.99
6		-.24	1.02	-.30	1.03	-.12	.85
7		.02	.72	.03	.86	.13	.83
8		-.02	.96	-.29	1.08	.23	.91
9		-.11	.61	.26	.87	-.29	.53
10		.39	.45	.61	.91	.31	.75
11		-.18	.82	.11	1.06	.01	.95
12		-.16	.48	-.07	.79	-.05	.60
13		.03	.61	-.24	.80	-.37	.62
14		.09	.83	-.13	.99	-.01	.61
15		-.13	.76	-.22	.74	-.02	.83
16		-.03	.46	.25	.55	.06	.72

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	11	(n=9)		(n=16)		(n=14)	
1		.01	.78	.00	1.01	-.50	1.15
2		-.11	.59	.11	.52	.14	.65
3		.05	.37	-.13	.63	.54	.53
4		.06	.68	-.07	.89	.04	.95
5		.11	.41	.09	.61	.19	.73
6		-.48	.61	-.07	.79	-.03	.96
7		-.02	1.17	.17	.93	-.17	.97
8		-.22	.49	.20	.52	-.62	.99
9		-.17	.60	.24	.64	-.51	.73
10		.51	.87	.42	.60	.74	1.00
11		-.22	.56	.02	.71	-.17	.90
12		.35	.91	.19	.66	-.28	.77
13		-.43	1.02	-.18	.80	-.00	.91
14		-.20	1.18	-.34	.65	-.02	.53
15		.43	.64	.35	.57	-.05	.62
16		-.30	.65	.06	.50	.26	.94
	12	(n=9)		(n=72)		(n=44)	
1		-.08	1.05	-.37	1.15	-.46	1.01
2		-.47	.93	.21	.79	.04	.87
3		-.35	.75	.14	.86	.08	.84
4		-.60	.61	-.24	.84	-.22	.87
5		-.72	1.37	-.07	1.00	-.43	.95
6		-.22	.30	.17	.71	.04	.78
7		-.14	.48	.06	.84	-.01	.65
8		.09	.64	.16	.96	.08	1.10
9		-.40	.74	-.07	.82	.00	.78
10		.74	.61	.28	.78	.41	.84
11		-.43	.88	.27	.81	.22	.83
12		.11	.63	.07	.66	-.16	.67
13		-.49	.52	.13	.67	-.07	.65
14		.14	.52	-.00	.76	-.13	.76
15		.44	1.04	-.09	.78	.04	.71
16		.24	.67	.07	.68	.01	.72

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	14	(n=7)		(n=10)		(n=12)	
1		-.25	.75	-.53	.92	-.13	.90
2		-.16	.74	.55	.39	.34	.71
3		.49	.78	-.57	1.22	-.07	.49
4		.48	1.01	-.19	.84	-.36	.97
5		-.67	1.42	-.31	1.03	-.43	.85
6		.21	.67	-.29	.88	-.45	.92
7		.28	.76	.25	.85	.20	.58
8		.25	.67	-.18	1.35	.44	.56
9		.22	.75	.80	1.13	.35	.45
10		.39	.96	.44	.75	-.29	.47
11		.12	.37	-.24	.57	-.04	.93
12		-.60	.81	.03	.60	-.27	.78
13		-.27	.74	.06	.62	.45	.56
14		-.49	.70	-.22	.76	.21	.77
15		-.37	.70	.40	1.06	.15	.58
16		.10	.91	-.13	.71	.03	.68
	20	(n=14)		(n=12)		(n=9)	
1		.07	.91	.15	.75	-.51	.70
2		-.18	.48	.26	.47	.04	.55
3		-.28	.99	.32	.44	-.13	.56
4		.03	.77	.83	.65	.84	.69
5		-.06	1.20	.03	.58	-.19	.99
6		.23	.92	-.06	.83	-.50	.98
7		.56	.85	.50	.58	.55	.71
8		-.20	1.09	.19	.26	.63	.60
9		-.04	.97	.16	.66	-.14	.78
10		-.12	.61	-.27	.72	-.38	.27
11		.17	.81	.21	.72	-.01	.69
12		-.22	.89	.10	.52	.02	.60
13		.40	.89	-.17	.59	-.20	.59
14		-.17	.67	.07	.66	.23	.41
15		.29	.73	.04	.47	-.35	.36
16		-.72	1.07	-.11	.49	-.45	.65

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	21	(n=13)		(n=6)		(n=9)	
1		.38	.59	1.04	.36	.36	.69
2		-.11	.88	-.05	1.00	-.16	.60
3		-.05	1.10	-.07	.77	.05	.80
4		-.54	.85	.62	.56	.91	.49
5		.30	.53	-.24	.22	-.43	1.21
6		-.13	.96	-.08	1.05	-.40	.74
7		.74	.83	.28	.64	-.30	.52
8		-.06	.85	.09	.25	.05	.87
9		-.22	.54	-1.08	1.48	-.87	.73
10		-.21	.38	-.77	.52	-.19	.57
11		.06	.80	-.17	1.11	-.28	.43
12		-.04	.96	-.11	.59	-.12	.68
13		.14	.59	-.15	.62	-.03	.45
14		.17	1.08	.19	.67	.03	.65
15		-.08	.98	-.16	.54	-.25	.48
16		.31	.44	-.02	.38	.25	.77
	22	(n=8)		(n=8)		(n=5)	
1		.48	.77	.35	1.03	-.43	1.39
2		-.17	1.01	.09	.54	-.43	.70
3		-.86	1.37	.36	.45	.17	.71
4		.21	.75	.49	.89	.51	1.08
5		-.03	.31	-.19	.97	-.83	.91
6		.04	1.14	.11	.28	-.30	.75
7		.54	1.16	.60	.68	.10	.76
8		-.03	.69	.10	.23	-.03	1.74
9		-.33	.59	-.08	.52	-.27	.59
10		.30	.39	-.12	.49	-.01	.68
11		.30	.61	-.18	.81	-.33	.56
12		-.15	.84	.00	.43	.39	.36
13		-.04	.92	.14	.55	-.27	.74
14		-.20	.47	-.14	.67	.02	1.04
15		.59	.54	-.14	.29	-.02	.44
16		-.23	.43	-.01	.49	-.06	1.21

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	23	(n=3)		(n=2)		(n=2)	
1		.66	.13	.17	.61	-.09	1.07
2		.42	.81	.40	.48	.51	.14
3		.11	.12	.46	.41	.60	.29
4		-.00	1.21	.72	.62	.98	.01
5		.30	.47	.21	.43	-.11	.23
6		-.01	.91	.53	.67	.15	.23
7		.42	.19	.35	.53	.14	.80
8		.27	.26	.33	.66	-.37	.76
9		-.21	.71	-.28	.21	.09	.44
10		-.36	.21	-.03	.28	-.42	.91
11		.58	.50	-.03	.53	-.02	.90
12		.06	.50	-.55	1.02	-.10	.49
13		-.01	.57	.10	.41	-.42	.37
14		.10	.78	.51	.74	.54	.21
15		-.32	.38	.32	.33	.30	.27
16		-.37	.63	.06	.53	.39	.13
	25	(n=15)		(n=19)		(n=11)	
1		.20	.91	-.12	.92	-.76	.82
2		.09	.58	.02	.65	.61	.48
3		.33	.67	.32	.56	.51	.46
4		.27	.67	.62	.52	.32	1.08
5		-.33	.79	.03	.70	-.15	.72
6		-.01	.58	-.21	.70	.01	.43
7		.42	.66	.11	.82	-.37	1.04
8		.06	.98	-.09	.78	-.25	1.15
9		-.07	.68	-.27	.69	-.18	.81
10		.02	.83	-.04	.76	-.01	.88
11		-.31	.78	-.02	.62	-.60	.93
12		.11	.50	.17	.76	-.13	.72
13		.11	.79	.13	.52	.33	.76
14		-.11	.68	-.42	.51	-.80	.78
15		-.06	.65	-.16	.68	.28	.57
16		-.56	.70	-.42	.81	-.61	1.36

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	26	(n=13)		(n=9)		(n=12)	
1		-.03	1.03	-1.04	1.52	-.07	1.21
2		.34	.35	.29	.90	.07	.81
3		.26	.54	.47	.83	.26	.76
4		.28	.62	-.09	.90	.04	.67
5		-.21	1.00	-.06	.84	-.10	.73
6		-.07	1.28	-.29	1.10	-.19	.81
7		-.30	.92	-.25	.74	.14	.85
8		-.08	1.09	-.30	1.10	-.30	.83
9		-.16	.92	-.30	.79	-.61	.66
10		-.31	.64	-.46	.41	-.23	.64
11		-.04	.76	-.66	.81	-.22	.75
12		.19	.54	.12	.68	-.44	.57
13		.21	.78	.28	1.29	.34	.72
14		-.15	.93	.10	.91	-.11	.67
15		.06	.83	.41	.94	.19	.89
16		.27	.50	.46	.34	-.03	1.04
	27	(n=44)		(n=36)		(n=42)	
1		-.05	1.22	.22	.80	-.07	.92
2		.31	.81	.11	.66	.16	.70
3		-.40	1.06	.09	.59	-.24	.89
4		.14	.90	.13	.77	-.06	.74
5		.03	.85	-.17	1.03	-.15	1.06
6		-.38	1.41	-.29	1.09	.08	.81
7		.24	.90	-.09	.96	.13	.89
8		-.09	.90	-.06	1.10	.05	.96
9		.31	1.11	.14	.89	-.00	.76
10		.26	1.15	.26	.86	.20	.76
11		-.13	.86	.03	.83	.19	.77
12		.00	.91	.05	.70	-.12	.82
13		-.22	.74	.11	.69	-.16	.87
14		-.02	1.14	-.14	.78	.01	.69
15		.28	.65	-.08	.92	.06	.87
16		.00	.60	.18	.61	.03	.99

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	28	(n=73)		(n=93)		(n=103)	
1		-.06	.94	.05	.70	-.12	.95
2		.18	.75	-.78	1.27	.08	.79
3		-.02	.92	-.29	1.08	.11	.85
4		-.38	.99	-.21	.69	-.30	.89
5		-.18	.86	.37	.83	.17	.76
6		-.05	.96	.37	.92	-.04	.70
7		-.01	.80	-.53	.95	.12	.80
8		-.01	1.06	-.17	.78	.09	.81
9		-.01	.67	.67	.81	-.17	.66
10		.04	.69	-.40	.87	.09	.62
11		.07	.73	-.24	.83	.13	.79
12		.08	.84	-.17	1.25	.11	.66
13		-.06	.65	-.19	.79	-.04	.91
14		-.09	.70	.22	.71	-.06	.73
15		.09	.70	-.34	.87	.07	.69
16		.07	.89	-.04	.64	.08	.71
	29	(n=81)		(n=109)		(n=90)	
1		.14	.94	.67	.74	-.01	.91
2		.05	.65	-.48	.78	.20	.61
3		.20	.46	-.11	.81	.09	.93
4		-.11	.82	-.28	1.32	-.23	.78
5		-.10	.88	-.21	.71	-.04	.84
6		-.12	1.08	.24	.99	-.08	.91
7		-.01	.68	-.47	.95	-.06	.68
8		.15	.66	-.18	.62	.09	.75
9		-.11	.70	.10	.53	-.15	.76
10		.20	.70	-.91	1.25	.07	.76
11		.05	.75	-.64	1.30	.13	.77
12		.07	.62	-.04	.53	.03	.56
13		.06	.73	.72	.80	.11	.78
14		-.10	.73	.50	.89	-.06	.64
15		-.08	.67	-.81	.80	.08	.63
16		.06	.68	-.26	.72	.15	.62

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	30	(n=19)		(n=33)		(n=33)	
1		.17	.87	.12	.94	.35	.89
2		.27	.53	.23	.77	.33	.52
3		.29	.52	.34	.57	.08	.63
4		.17	.78	.16	.73	.37	.79
5		-.06	.57	-.14	.84	-.05	.78
6		.19	.40	.36	1.16	.05	.91
7		-.18	.76	-.02	.86	-.43	.66
8		.04	.78	.10	.72	-.00	.83
9		-.37	.64	-.18	.75	-.08	.50
10		.07	.66	-.08	.69	-.10	.76
11		-.06	.74	.23	.76	.42	.64
12		.20	.67	.01	.57	.12	.57
13		.13	.80	.07	.68	-.05	.84
14		.11	.59	.08	.48	.04	.68
15		.20	.49	.30	.67	.50	.62
16		-.25	.78	.03	.84	-.39	.73
	31	(n=19)		(n=17)		(n=17)	
1		.48	.79	.25	.84	.14	1.01
2		-.17	.59	.22	.63	.37	.56
3		-.86	1.15	.39	.62	.44	.31
4		.21	.72	.23	.96	.34	.85
5		-.03	.67	.01	.89	.37	.58
6		.04	.90	.02	.86	.47	.46
7		.54	.80	.25	.71	.17	.73
8		-.03	.79	-.07	.56	.23	.49
9		-.33	.49	-.25	.75	.14	.78
10		.30	.91	-.17	.59	.14	.71
11		.31	.84	-.00	.90	.07	.87
12		-.15	.62	.32	.57	.14	.71
13		-.04	.69	-.12	.69	-.12	.52
14		-.20	.88	-.04	.65	-.09	.65
15		.59	.73	-.07	.60	.29	.71
16		-.23	.73	-.09	.54	-.08	.54

FACTOR	WORK GROUP	PRETEST		POSTTEST 1		POSTTEST 2	
		\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
	32	(n=5)		(n=11)		(n=7)	
1		.37	.42	-.07	1.25	.11	1.54
2		.45	.38	.11	.55	-.16	.84
3		.76	.12	.49	.73	-.18	.99
4		-.24	.95	-.44	.97	-.35	1.32
5		.15	.64	-.23	.87	-.14	1.41
6		-.42	.43	-.26	.96	-.19	.71
7		.23	.66	.44	.57	.78	1.13
8		.35	.11	.23	.37	.54	.50
9		.36	.44	-.25	.54	-.18	.63
10		-.39	.33	-.33	.35	-.42	.49
11		-.34	.55	-.22	.98	-.55	1.23
12		.28	.50	-.03	.47	.28	.60
13		.14	.51	.37	.49	.03	.74
14		.41	.46	.56	.69	.75	.94
15		.41	.55	.17	.61	.57	.43
16		.47	.40	.25	.50	.01	.52

APPENDIX D
SUPERVISOR INVENTORY

Instructions

The statements below describe characteristics of managers or supervisors. Indicate your agreement by choosing the statement below which best represents your attitude concerning your supervisor.

- | | |
|-------------------------|--------------------------------|
| 0 = Not applicable | 4 = Neither agree nor disagree |
| 1 = Strongly disagree | 5 = Slightly agree |
| 2 = Moderately disagree | 6 = Moderately agree |
| 3 = Slightly disagree | 7 = Strongly agree |

Select the corresponding number and mark your answer on the separate answer sheet.

1. My supervisor allows some group members to use him/her.
2. My supervisor creates a pleasant atmosphere within the group.
3. My supervisor relates to group members as a peer.
4. My supervisor's group meetings are very casual.
5. My supervisor's workers consider him/her a good friend.
6. My supervisor's actual job is very similar to the group members' jobs.
7. My supervisor does not permit differences of opinion to be expressed in group meetings.
8. My supervisor assists in settling group members' differences.
9. My supervisor maintains a high degree of solidarity among the group.
10. My supervisor's members' opinions are respected in his/her decision making.
11. My supervisor asks members for their ideas on task allocation.
12. My supervisor confers with group members before implementing any plans.
13. My supervisor is very interested in listening to the members' problems.
14. My supervisor is overcome by details.

15. My supervisor has a great anxiety when waiting for new events.
16. My supervisor is caused a great deal of stress by new methods.
17. My supervisor is the group leader only by title.
18. My supervisor remains separate from the group.
19. My supervisor sees the work group as a component within the organization.
20. My supervisor is more concerned with security than salary.
21. My supervisor considers the organization's benefits very important.
22. My supervisor believes job security is achieved through finishing work on time.
23. My supervisor helps to stimulate enthusiasm for the job.
24. My supervisor's group members think he is very enterprising and strong willed.
25. My supervisor focuses on major progress points not specific events.
26. My supervisor schedules work no more than one week ahead.
27. My supervisor tells his workers to set specific goals instead of general goals.
28. My supervisor keeps everyone moving quickly about their work.
29. My supervisor drives hard when a job needs to be done.
30. My supervisor gives me technical advice to improve my work when I make a mistake.
31. My supervisor encourages me to continue my efforts even after I make a mistake.
32. My supervisor punishes people who make mistakes.
33. My supervisor ignores mistakes that people make.
34. My supervisor consistently takes actions ahead of changes in our organization.
35. My supervisor does not base actions pertaining to the organization on knowledge of the organization's objectives.

36. My supervisor uses knowledge of anticipated organizational direction to make on-the-spot decisions.
37. My supervisor is flexible in his handling of things, basing his actions on the task and the people involved.
38. My supervisor is cooperative.
39. My supervisor is difficult to coordinate with.
40. My supervisor always goes strictly by formal rules when working with people.
41. My supervisor provides needed information in a timely manner.
42. My supervisor makes sure I clearly understand all information he gives me.
43. My supervisor does not offer any information that is not essential.
44. My supervisor communicates a lot with people.
45. My supervisor helps me develop my work skills.
36. My supervisor works at improving his work skills.
47. My supervisor provides challenging work opportunities.
48. My supervisor does not take on any task for himself that is not required.
49. My supervisor is good at resolving conflict within his work group.
50. My supervisor transmits his enthusiasm for attaining goals to others.
51. My supervisor has difficulty getting his people to work toward the organization's goals.
52. My supervisor rarely looks for ways to improve performance.
53. My supervisor periodically reviews his course of actions to find ways to improve performance.
54. My supervisor encourages me to suggest ways to improve my job.
55. My supervisor gives orientation to the overall work effort.
56. My supervisor diagnosis problems that need attention.

57. My supervisor is supportive in personal matters.
58. My supervisor is only interested in work-related matters.
59. My supervisor does not hesitate to take decisive action when it is called for.
60. My supervisor supports the interests of his subordinates in dealing with his boss.
61. My supervisor encourages me to try new ideas in my job.
62. My supervisor gives credit to the right person for results.
63. My supervisor genuinely listens when I talk.
64. My supervisor allows me to evaluate my own activities.
65. My supervisor is supportive of the people who work for him.
66. My supervisor gives directions as politely as possible.
67. My supervisor treats people as though they are only good for whatever work he can get from them.
68. My supervisor treats people as members of a "company family."
69. My supervisor provides the technical advice I need.
70. My supervisor resolves conflict within the group.
71. My supervisor encourages people to work as a team.
72. My supervisor is consistent in his managerial behavior.
73. My supervisor makes me feel accountable to him.
74. My supervisor readily accepts ideas presented by the work group.
75. My supervisor over controls my work.
76. My supervisor's boss is aware of the needs of our work group.
77. My supervisor supplies notification of changes in advance.
78. My supervisor appears competent at predicting future events.
79. My supervisor makes the work more enjoyable for group members.
80. My supervisor tells me exactly what he expects me to do.

81. My supervisor is a good planner.
82. My supervisor sets high performance standards.
83. My supervisor's group meetings are well planned with specific objectives.
84. My supervisor encourages goal setting within our group.
85. My supervisor informs me of changes in advance.
86. My supervisor is consistent in predicting events in our organization.
87. My supervisor encourages teamwork.
88. My supervisor represents the group at all times.
89. My supervisor establishes good work procedures.
90. My supervisor has made his responsibilities clear to the group.
91. My supervisor fully explains procedures to each group member when appropriate.
92. My supervisor's directions must be followed exactly.
93. My supervisor performs well under pressure.
94. My supervisor usually makes decisions without group discussion.
95. My supervisor encourages me toward greater accomplishment.
96. My supervisor overemphasizes the need to accomplish more than other groups.
97. My supervisor resolves conflicts within the group.
98. My supervisor over controls my work.
99. My supervisor is approachable.
100. My supervisor tries to make the work more satisfying for group members.
101. My supervisor takes time to help me when asked.
102. My supervisor respects work group members' opinions in his decision making.
103. My supervisor asks members for their ideas on task improvements.

104. My supervisor is very interested in helping me resolve my problems.
105. My supervisor explains how my job contributes to the overall mission.
106. My supervisor helps to stimulate enthusiasm for the job.
107. My supervisor focuses on major goals.
108. My supervisor helps me set specific goals.
109. My supervisor is consistent in his managerial behavior.
110. My supervisor lets me know when I am doing a good job.
111. My supervisor lets me know when I am doing a poor job.
112. My supervisor always helps me improve my performance.
113. My supervisor insures that I get job related training when needed.
114. My job performance has improved due to feedback received from my supervisor.
115. My supervisor encourages ideas for improving procedures.
116. When I need technical advice I usually go to my supervisor.
117. My supervisor is an effective manager.
118. My supervisor keeps me informed of changes that affect my job.
119. My supervisor frequently gives me feedback on how well I am doing my job.
120. My supervisor usually supports my decisions.
121. My supervisor deals efficiently with multi-faceted problems.
122. My supervisor restores organization from bedlam.
123. My supervisor makes the work schedules.
124. My supervisor attempts to accomplish more than what is expected.
125. My supervisor keeps his/her equipment in fine working order.
126. My supervisor's documents are neat and precise.

127. My supervisor sets standards and goals in areas of low achievement.
128. My supervisor's work is well organized and systematic.
129. My supervisor is very diplomatic.
130. My supervisor spends a lot of time on design and organization.
131. My supervisor answers questions with conviction and decisiveness.
132. My supervisor shows a great amount of neatness in his/her work.
133. My supervisor is accurate in predicting future trends.
134. My supervisor stresses a well coordinated effort from the group.
135. My supervisor speaks for the group at all times.
136. My supervisor has an explosive temper that is short fused.
137. My supervisor is very persuasive.
138. My supervisor sets the procedures and work to be done.
139. My supervisor overcomes threats to his/her leadership.
140. My supervisor pushes for greater accomplishment.
141. My supervisor asks for greater accomplishment.
142. My supervisor uses the power of position to insure compliance with orders.
143. My supervisor applies pressure when individuals do not perform well.
144. My supervisor insists on the implementation of his/her ideas first.
145. My supervisor compels the members to follow his/her orders.
146. My supervisor provides close control and firm direction.
147. My supervisor is bucking for a promotion.
148. My supervisor receives pleasure from the privileges of his/her position.

149. My supervisor is working his/her way up the organizational ladder.
150. My supervisor frequently lets other group members take away his/her leadership role.

APPENDIX E
JOB INVENTORY

Instructions

Below are items which relate to your job. Read each statement carefully and then decide to what extent the statement is true of your job. Indicate the extent that the statement is true for your job by choosing the statement below which best represents your job.

- | | |
|-----------------------------|------------------------------|
| 1 = Not at all | 5 = To a fairly large extent |
| 2 = To a very little extent | 6 = To a great extent |
| 3 = To a little extent | 7 = To a very great extent |
| 4 = To a moderate extent | |

1. To what extent does your job require you to do many different things?
2. To what extent does your job require you to use a variety of your talents and skills?
3. To what extent does your job involve doing a whole task or unit of work?
4. To what extent is your job significant in that it affects others in some important way?
5. To what extent does your job provide a great deal of freedom and independence in scheduling your own work?
6. To what extent does your job provide you a great deal of freedom and independence in selecting your own procedures to accomplish it?
7. To what extent does just doing your job provide you with chances to find out how well you are doing your job?
8. To what extent do additional duties (duties not directly related to primary job duties) interfere with the performance of your primary job?
9. To what extent do you have adequate tools and equipment to accomplish your job?
10. To what extent is the amount of work space provided adequate?
11. To what extent does your job provide the chance to know for yourself when you do a good job?

12. To what extent does your job provide the chance to be responsible for your own work?
13. To what extent does doing your job well affect a lot of people?
14. To what extent does your job provide you with the chance to finish completely the piece of work you have begun?
15. To what extent does your job require you to use a number of complex skills?
16. To what extent are you allowed to make major decisions required to perform your job well?
17. To what extent are you proud of your job?
18. To what extent do you feel accountable to your supervisor in accomplishing your job?
19. To what extent do you know exactly what is expected of you in performing your job?
20. To what extent are your job performance goals difficult to accomplish?
21. To what extent are staff assistance visits helpful in achieving job performance?
22. To what extent are your job performance goals as set by others or the organization clear and specific?
23. To what extent are your job performance goals as set by others or the organization realistic?
24. To what extent do you use management information systems (e.g., reports, computer printouts, etc.) to make decisions in your job?
25. How much of your time is used for planning more than six months ahead?
26. How much of your time is used for weekly or monthly planning?
27. How much of your time is used for daily planning?
28. To what extent do you perform the same tasks repeatedly within a short period of time?
29. To what extent are you faced with the same type of problem on a weekly basis?
30. To what extent are tasks you perform easy to accomplish?

31. To what extent is planning modified to meet changing job related needs?
32. To what extent is planning modified to meet changing environment needs?
33. To what extent does your job keep you busy?
34. To what extent is the amount of information you get from other work groups adequate to meet your job needs?
35. To what extent do you know the objectives of your organization?
36. To what extent are you aware of promotion/advancement opportunities that affect you?
37. To what extent is your work group (people under the same immediate supervisor as you) involved in establishing goals?
38. To what extent does your work group solve problems effectively?
39. To what extent does your work group perform effectively under pressure?
40. To what extent do coworkers in your work group maintain high standards of performance?
41. To what extent do you have the opportunity to progress up your career ladder?
42. To what extent are you being prepared to accept increased responsibility?
43. To what extent do people who perform well receive recognition?
44. To what extent do you feel adequately trained to perform your assigned tasks?
45. To what extent are you satisfied with your job?
46. To what extent does your work give you pride and feeling of self-worth?
47. To what extent is the condition of tools or equipment that you use adequate?
48. To what extent are equipment malfunctions handled promptly?
49. To what extent are necessary materials or supplies available?

50. To what extent is the lighting in your immediate work area adequate?
51. To what extent is the normal temperature of your work environment comfortable?
52. To what extent do you have the opportunity to learn skills which will enhance your promotion potential?
53. To what extent are you faced with the same kinds of problems on a daily basis?
54. To what extent is it difficult for you to complete tasks assigned to you on schedule?
55. To what extent does your job require you to adjust your work plans in order to accomplish a task?
56. To what extent does your job require you to juggle your priorities to get work done?
57. To what extent does your job require you to work directly with other work group members to accomplish a task?
58. To what extent does your job require coordination with other work group members to accomplish a task?
59. To what extent does not getting your job done on schedule affect others?
60. To what extent does your job call for you to use your initiative?
61. To what extent is your job interesting?
62. To what extent does your job utilize your training for that job?
63. To what extent does your job enable you to utilize your natural talents or abilities?
64. To what extent does your job provide you the opportunity to accomplish something worthwhile?
65. To what extent does your job keep you busy?
66. To what extent does your job provide you the opportunity to use your own judgment?
67. To what extent are there interruptions in your daily routine?
68. To what extent does your job enable you to develop work methods relating to that job?

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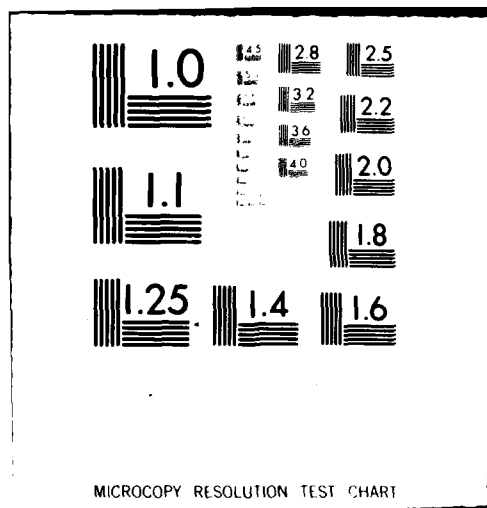
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69. To what extent are you allowed to do your work the way you feel is best?
70. To what extent do discussions with other work group members aid you in performance of your job?
71. To what extent are your work activities organized in a logical sensible way?
72. To what extent does your job contribute to the goals of your organization?
73. To what extent is your job challenging?
74. To what extent does your job enable you to learn new things?
75. To what extent does doing your job well lead to positive feelings from members of your work group?
76. To what extent does doing your job well lead to rewards from the organization?
77. To what extent is your workload adequately considered when job assignments are made?
78. To what extent does trying hard make a difference in doing your job well?
79. To what extent are there times when you receive differing task accomplishment directions from different people in your job?
80. To what extent are you allowed to provide ideas for solving job-related problems?
81. To what extent is dealing with people a part of your job?

APPENDIX F
SUPERVISOR INVENTORY FACTORS

<u>FACTOR</u>	<u>ITEM</u>	<u>LOADING</u>	<u>STATEMENT/QUESTION*</u>
<u>Factor 1</u> Effective Manager	2	.74	Creates pleasant atmosphere.
	49	.77	Good at resolving conflict within the work group.
	65	.77	Supportive of people working for him.
<u>Factor 2</u> Overcontrol	92	.62	Directions must be followed exactly.
	96	.62	Overemphasizes need to accomplish more than other groups.
	140	.67	Pushes for greater accomplishment.
<u>Factor 3</u> Abusive Use of Power	7	.45	Does not permit expression of differences of opinion.
	111	.54	Lets me know when I do a poor job.
	142	.53	Uses power to insure compliance with orders.
<u>Factor 4</u> Lack of Organizational Ability	11	.61	Asks group members for ideas on task allocation.
	12	.63	Confers with group members before implementing plans.
	51	.58	Has difficulty getting people to work toward organizational goals.
<u>Factor 5</u> Lack of Self Control	1	.45	Allows group members to use him.
	21	.46	Considers organization benefits very important.
	136	.37	Has an explosive temper that is short fused.

*The stem for all questions is excluded in this table. It reads: "My supervisor..."

**Item is reverse scored.

<u>FACTOR</u>	<u>ITEM</u>	<u>LOADING</u>	<u>STATEMENT/QUESTION*</u>
<u>Factor 12</u> Goal-Setting	27	.34	Tells workers to set specific goals.
	105	.33	Explains how my job contributes to the overall mission.
<u>Factor 13</u> Laissez-faire	33	.43	Ignores mistakes that people make.
	113	.37R**	Insures that I get job-related training.

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